UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,996	05/03/2006	Patrick Hermans	016782-0359	4949

22428 7590 05/19/2009

FOLEY AND LARDNER LLP
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER	
LEE, BENJAMIN P	

ART UNIT	PAPER NUMBER
3641	

MAIL DATE	DELIVERY MODE
05/19/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/577,996	HERMANS ET AL.	
	Examiner	Art Unit	
	BENJAMIN P. LEE	3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-12,16 and 17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-12,16 and 17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/19/2009 has been entered.

2. Applicant has amended claim 1 and added new claims 16 and 17.

Response to Arguments

3. Applicant's arguments filed 3/19/2009 have been fully considered but they are not persuasive. Applicant has amended claim 1 to require that the “metal cords or metal wires” are the “only stab-resistant elements" and argues that the armor of Kim fails to teach additional stab-resistant elements (other than the metal mesh). In response, Examiner respectfully asserts that each of the material components of the puncture resistant armor of Kim is inherently resistant to penetration to at least some degree. Even if Kim teaches that each of the elements (layers) of the armor is included for a specific function not related to stab-resistance, it is an inherent fact that each of the layers does resist, to some degree, stabbing, slicing, poking etc..

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 12, 16 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al. (U.S. Patent 6,962,739).

5. In regards to claims 1, 16, and 17, Kim et al (henceforth referred to as Kim) disclose a stab-resistant insert for protective textile, said insert comprising:

- at least one metal layer of a woven fabric with metal cords or metal wires. (item 52 of Kim figure 33a following, col. 22, lines 54-67);
- and at least one textile layer (item 15). Note that at col. 3, lines 33-35, Kim teaches that the base material or the connecting material may be a non-woven fabric and further that item 15 of figure 33a is a “connecting material”, col. 22, lines 54-67;
- said textile layer being in contact with and being connected to said metal layer by an adhesive (item 153 and col. 22, lines 54-67);
- wherein said textile layer comprises a non-woven material (col. 3, lines 33-35). Note that Kim teaches that the base material or the connecting material may

be a non-woven fabric and further that item 15 of figure 33a is a “connecting material”, col. 22, lines 54-67;

- metal cords or metal wires being the only stab-resistant elements. Note that each element of the armor disclosed by Kim is inherently resistant to stabbing, slicing, penetration etc. to at least some degree. Applicant is reminded that even if the stated purpose of a component is unrelated to armor or penetration resistance, any of the components taught by Kim are capable of providing some degree of resistance to a ballistic projectile or the stabbing point of a knife;

- Note that requiring the stab-resistant insert to consist of “at least” various components fails to limit the scope of the claim to consisting of “only” the claimed subject matter, since “at least" implies that the apparatus may include other components;

- Note that with respect claim 16, the transitional phrase, “consisting essentially of” is considered as limiting the scope of the claim to the specified materials, since Applicant's specification fails to provide any evidence that any additional layers of materials would materially affect the basis and novel characteristics of the claimed invention. It is apparent that Applicant's invention would still function as intended with an additional layer or layers of materials. see MPEP 2111.03, “Transitional Phrases”.

6. In regards to claim 12, Kim inherently disclose a protective textile product comprising a stab-resistant insert according to claim 1, since the material disclosed by Kim constitutes a "stab resistant insert" to the degree specified by Applicant.

7. Claim 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent 6,962,739) in view of Andresen et al. (U.S. Patent 6581212).

8. In regards to claims 2, Kim fails to explicitly disclose that the fabric is comprised of metal cords or metal wires lying in parallel or that the distance between said metal cords or metal wires varies between 0.40 mm and 3.2 mm. However, Andresen et al disclose a wire mesh for a protective garment with a layer of metal wires lying in parallel and with spacing between the metal wires of between 0.05mm and 0.45mm (col. 6, lines 32-40). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to utilize metal wire mesh for Kim with variations of weave, knit, braid etc configurations (i.e. parallel orientation of wire strands) and with various distances between the wires including 0.05mm to 0.45mm as taught by Andresen et al, to provide a mesh with tailored to a specific application and further to provide means to stop various size sharp objects from penetrating the garment.

9. In regards to claim 6, Kim as modified by Andersen discloses that at least one metal layer is multi-directional (see Andersen figures 1 and 2 following). Note that the

metal layer construction, when modified by Andersen, teaches a wire mesh layer with "multiple directions".

10. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent 6,962,739) in view of Andresen et al. (U.S. Patent 6581212) as applied to claim 2 above, and further in view of Brillhart et al. (U.S. Patent 6562435).

11. In regards to claim 3, the modified Goerz et al fail to disclose that the metal layer comprises elongated metal elements that are unidirectional within said metal layer. However, Brillhart et al (henceforth referred to as Brillhart) teaches deploying fibers in a parallel unidirectional orientation per layer (see Brillhart et al fig. 3 following). It is old and well known and would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to orient the reinforcing strands of the modified Kim apparatus in a unidirectional manner per layer as taught by Brillhart et al, to provide maximum axial load strength per layer.

12. In regards to claim 4, Kim as modified fails to explicitly disclose that the insert comprises more than one metal layer. However, Andresen teaches using multiple wire layers (col. 5, lines 58-62). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to incorporate more than one layer of wire in the metal layer of Kim as taught by Andresen, to enhance the stopping capability of the garment.

13. In regards to claim 5, Kim as modified by Andersen and Brillhart discloses that the elongated metal elements of one metal layer run in a different direction than the elongated metal elements of another metal layer. Note that the Kim as modified by Andersen teaches multiple layers each with elements "running" in at least two different directions (col. 5, lines 58-67).

14. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent 6,962,739) in view of Andresen et al. (U.S. Patent 6581212) and Brillhart et al. (U.S. Patent 6562435) as applied to claim 3 above, and further in view of Toulmin, Jr. et al. (U.S. Patent 2758952).

15. In regards to claim 8, the modified Kim as modified fails to disclose that a part of said non-woven material penetrates between the elongated metal elements to decrease the likelihood of shifting the elongated metal elements in said metal layer. However, Toulmin, Jr. et al (henceforth referred to as Toulmin, Jr.) teaches a metal wire mesh with a mat of fibers overlying where some of the fibers extending through openings in the wire mesh (col. 9, lines 55-75). It would have been obvious to one ordinary skill in the art at the time of Applicant's invention to intertwine or penetrate the metal mesh layer(s) with the textile layer of Kim as taught by Toulmin, Jr., to increase the strength and impart a cohesive relationship between the layers.

16. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent 6,962,739) in view of Wynne et al. (U.S. Patent 5,804,757).

17. In regards to claims 9 and 10, Kim fails to explicitly teach that the non-woven material is comprised of synthetic fibers and further that more than thirty percent of said synthetic fibers is selected from a group consisting of aramid fibers, high-density high-molecular weight polyethylene fibers, poly(p-phenylene-2,6- benzobisoxazole) fibers, polybenzimidazole fibers, and any combination thereof. However, Wynne et al (henceforth referred to as Wynne) teaches using a high density polyethylene non-woven fiber for a layer of a ballistic armor device (col. 7, lines 17-23). It would have been obvious to one ordinary skill in the art at the time of Applicant's invention to utilize any of various materials to fabricate the non-woven layer of Kim such as high density polyethylene fibers as taught by Wynne since it would have been obvious to combine the known prior art fiber material (high density polyethylene) as taught by Wynne with the known prior art armor structure of Kim to obtain the predictable result of providing adequate ballistic protection.

18. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent 6,962,739) in view of Fisher et al. (U.S. Patent 6,807,891).

19. In regards to claim 11, Kim fails to explicitly teach that each metal layer is at both sides in contact with and is connected with a textile layer comprising non-woven

material. However, Fisher et al (henceforth referred to as Fisher) teaches overlaying multiple layers of alternating fabric and wire mesh (col. 4, lines 45-58 and col. 6, lines 19-28) which constitutes a metal layer in contact at both sides with a textile layer. It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to incorporate alternating multiple layers of wire mesh and fabric as taught by Fisher in the laminate material of Kim to increase the penetration resistance.

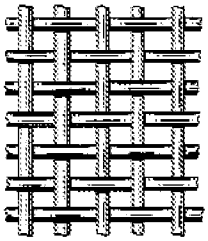
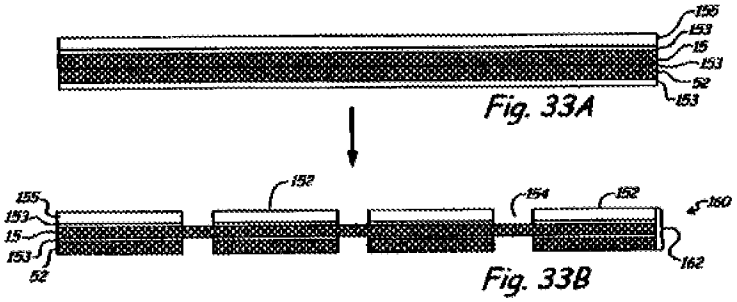


FIG. 1



Kim

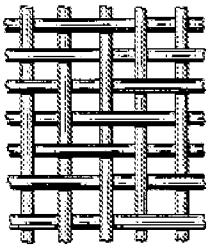


FIG. 2

Andersen

Summary/Conclusion

20. Claims 1-6, 8-12, 16 and 17 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin P. Lee whose telephone number is 571-272-8968. The examiner can normally be reached between the hours of 8:30am and 5:00pm on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 571-272-6873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Benjamin P. Lee/

Examiner, Art Unit 3641